

What is claimed is:

1. A GUI-equipped terminal apparatus which is connected to another terminal device through a network, and forms a distributed software environment, comprising:

GUI display means;

a virtual language environment which is a program execution environment in which a program code generated in a predetermined language can be executed independent of a specific type of apparatus;

access limit confirmation means of operating in another execution environment different from said virtual language environment; and

network I/F means,

wherein:

said network I/F means exchanges information with another terminal device through the network;

said GUI display means displays an application GUI at an instruction from an application executed in said virtual language environment, and displays an access limit confirmation GUI at an instruction from said access limit confirmation means; and

said access limit confirmation means receives an access confirmation message encrypted by another terminal device through said network I/F means, and transmits an encrypted

access confirmation reply message to said other terminal device through said network I/F means.

2. The GUI-equipped terminal apparatus according to claim 1, further comprising display means of displaying an image drawing signal output from said GUI display means on a monitor, wherein:

said GUI display means has an external output terminal;

said GUI display means displays the application GUI at an instruction from an application executed in said virtual language environment only on said display means or both said display means and said external output terminal; and

when an instruction from said access limit confirmation means is received, said access limit confirmation GUI is displayed only on said display means, and not on said external output terminal.

3. A resource control terminal apparatus which is connected to another terminal device through a network, and forms a distributed software environment, comprising:

a virtual language environment which is a program execution environment in which a program code generated in a predetermined language can be executed independent of a specific type of apparatus;

access limit search means of operating in another execution environment different from said virtual language environment; and

network I/F means,

wherein:

said network I/F means exchanges information with said another terminal device through said network;

said access limit search means receives and encrypts an access limit search request from an resource control program code executed in said virtual language environment, and transmits the access confirmation message to said other terminal device through said network I/F means, receives and decrypts an encrypted access confirmation reply message from said other terminal device through said network I/F means; and

said access limit search means answers said access limit search request from the resource control program code according to said decrypted access confirmation reply message.

4. The resource control terminal apparatus according to claim 3,

wherein:

said access limit search means receives an access limit search request specifying an optional program ID from said resource control program code;

said access limit search means retrieves said other terminal device in which a program having said program ID is being executed;

said access limit search means transmits said encrypted access confirmation message to said retrieved other terminal device through said network I/F means;

said access limit search means receives an encrypted access confirmation reply message from said retrieved other terminal device through said network I/F means, and decrypts said encrypted access confirmation reply message; and

said access limit search means answers an access limit search request from said resource control program code according to said decrypted access confirmation reply message.

5. The resource control terminal apparatus according to claim 3,

wherein:

said access limit search means receives an access limit search request specifying a profile ID from said resource control program code;

said access limit search means retrieves a terminal device having a permission right corresponding to said profile ID;

said access limit search means transmits an encrypted access confirmation message to a terminal device having said permission right through said network I/F means;

said access limit search means receives an encrypted access confirmation reply message from the terminal device having said permission right through said network I/F means, and decrypts said encrypted access confirmation reply message; and

said access limit search means answers an access limit search request from said resource control program code according to said decrypted access confirmation reply message.

6. A network system, comprising:

at least one GUI-equipped terminal apparatus connected to a network; and

at least one resource control terminal apparatus connected to said network,

wherein:

said GUI-equipped terminal apparatus and said resource control terminal apparatus form a distributed software environment;

said GUI-equipped terminal apparatus comprises:

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GUI display means;

a first virtual language environment which is a program execution environment in which a program code generated in a predetermined language can be executed independent of a specific type of apparatus;

access limit confirmation means of operating in another execution environment different from said first virtual language environment; and

first network I/F means,

wherein:

said resource control terminal apparatus comprises:

a second virtual language environment which is a program execution environment in which a program code generated in said predetermined language can be executed independent of a specific type of apparatus;

access limit search means of operating in another execution environment different from said second virtual language environment; and

second network I/F means,

wherein:

said first network I/F means exchanges information with said resource control terminal apparatus through said network;

said second network I/F means exchanges information at least with said GUI-equipped terminal apparatus through said network;

said access limit search means receives an access limit search request from a resource control program code executed in said second virtual language environment, and encrypts the request, and transmits said access confirmation message to said GUI-equipped terminal apparatus through said second network I/F means;

said access limit confirmation means receives said encrypted access confirmation message from said access limit search means through said first network I/F means, decrypts said access confirmation message, and outputs the decrypted message to said GUI display means;

said GUI display means displays an application GUI at an instruction from an application executed in said first virtual language environment, and displays an access limit confirmation GUI upon receipt of said access confirmation message from said access limit confirmation means;

said GUI display means outputs an input to said access limit confirmation GUI to said access limit confirmation means;

said access limit confirmation means generates an access confirmation reply message from said input and encrypts the message, said encrypted access confirmation reply message is

transmitted to said resource control terminal apparatus through said first network I/F means; and

said access limit search means receives the encrypted access confirmation reply message from said GUI-equipped terminal apparatus through said second network I/F means, decrypts the message, and answers the access limit search request from said resource control program code according to said decrypted access confirmation reply message.

7. The network system according to claim 6,  
wherein:

plurality of said GUI-equipped terminal apparatus is connected to a plurality of said networks;

said resource control terminal apparatus broadcasts an access confirmation message to said GUI-equipped terminal apparatus;

when said GUI-equipped terminal apparatus is directly operated by a user, does not receive another access confirmation reply message in response to said access confirmation message from said other GUI-equipped terminal apparatus, and receives said access confirmation message transmitted from said resource control terminal apparatus, said GUI-equipped terminal apparatus transmits an access limit confirmation receipt message, performs a GUI display, confirms



a request of the user, and broadcasts an access confirmation reply message.

8. The network system according to claim 6 or 7,  
wherein:

said access confirmation message transmitted from said resource control terminal apparatus contains bit map data of a GUI image for a user selecting information about access limit requested from said application;

said access confirmation reply message transmitted from said GUI-equipped terminal apparatus contains coordinates of a position at which the user performs an action on said bit map data of said GUI image;

said resource control terminal apparatus confirms selection of a user for information about said access limit based on said coordinates of the position, and answers the access limit search request from said application based on said selection of the user.

9. The network system according to claim 8, wherein said resource control terminal apparatus changes a position or an expression of a GUI unit forming bit map data of a GUI image contained in said access confirmation message each time said

resource control terminal apparatus transmits said access confirmation message.

10. The resource control terminal apparatus according to claim 3, wherein said resource control program code comprises the steps of:

transmitting said access limit search request when an access request is received from another program;

receiving a reply to said access limit search request;  
and

determining according to said reply whether or not said access request can be accessed.

11. The resource control terminal apparatus according to claim 4, wherein said resource control program code comprises the steps of:

specifying a program ID indicating the other program to said access limit search means when an access request is received from the other program;

transmitting said access limit search request; receiving a reply to said access limit search request; and

determining whether or not access at said access request can be accepted according to said reply.

12. The resource control terminal apparatus according to claim 5, wherein said resource control program code comprises the steps of:

specifying said profile for said access limit search means when receiving an access request from another program;

transmitting said access limit search request;

receiving a reply to said access limit search request;

and

determining whether or not said access request can be accepted according to said reply.

13. The resource control terminal apparatus according to any one of claims 3 to 5, wherein said resource control program code comprises the steps of:

performing an access limit search request in a same procedure as an access confirmation request issued from a current program when receiving an access confirmation request from another program; and

determining whether or not the access confirmation request can be accepted according to a reply to the request.

14. A computer-processible medium storing a program and/or data used to direct a computer to perform all or a part of functions of all or a part of means of the resource control

terminal apparatus or the GUI-equipped terminal apparatus according to any one of claims 1 to 9.

15. An information aggregate which is a program and/or data used to direct a computer to perform all or a part of functions of all or a part of means of the resource control terminal apparatus or the GUI-equipped terminal apparatus according to any one of claims 1 to 9.

16. A computer-processible medium storing the steps of all or a part of said resource control program code of said resource control terminal apparatus according to any one of claims 10 to 13.